

REMARKS

This response is intended as a full and complete response to the final Office Action mailed May 1, 2006. In the Office Action, the Examiner notes that claims 4-6, 10-12 and 16-23 are pending and rejected. By this response, Applicants have herein amended claims 4-6, 10-12, and 16-23. No new matter has been entered.

Applicants' Representative thanks the Examiner for taking time to discuss the application. The Examiner has indicated that amendment of the independent claims of the application to further define how the system determines if there is capacity available in the in-band video channel for supporting IP data of an IP connection may result in allowance of the claims.

In view of both the amendments presented above and the following discussion, Applicants submit that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. §103.

It is to be understood that Applicants, by amending the claims, do not acquiesce to the Examiner's characterizations of the art of record or to Applicants' subject matter recited in the pending claims. Further, Applicants are not acquiescing to the Examiner's statements as to the applicability of the art of record to the pending claims by filing the instant responsive amendments.

REJECTIONS

35 U.S.C. §103(a)

Claims 4-6, 10-12, and 16-23

The Examiner has rejected claims 4-6, 10-12, and 16-23 under 35 U.S.C. §103(a) as being unpatentable over Goffin, II (US006918135B1, hereinafter "Goffin") in view of Addington (US006928656B, hereinafter "Addington") and Banker et al. (US005497187A, hereinafter "Banker"). Applicants respectfully traverse the rejection.

Applicants' independent claim 4 recites:

In a digital video television communication system having a headend coupled to a two-way communication medium and at least one digital video settop box coupled to said two-way communication medium,

said headend transmitting on a plurality of communication channels including first and second in-band video channels and an out-of-band region having at least one out-of-band communication channel, said first in-band video channel having a first plurality of multiplexed digital video channels, said second in-band video channel having a second plurality of multiplexed digital video channels, one of said multiplexed digital video channels in said first in-band video channel associated with an IP connection, a method of operation comprising:

- sending a channel resource request from said settop box to said headend, said channel resource request representing a channel change at said settop box from said one of the multiplexed digital video channels in said first in-band video channel to one of the multiplexed digital video channels in said second in-band video channel, said channel resource request for changing the IP connection association from said one of the multiplexed digital video channels in said first in-band video channel to said one of the multiplexed digital video channels in said second in-band video channel;

- determining whether said second in-band video channel has available capacity for transporting IP data of the IP connection in said second in-band video channel using IP over MPEG data packets, wherein available capacity is determined based on a number of other IP connections supported by said second in-band video channel;

- selecting a communication channel at said headend by selecting one of:

- an available communication channel in said second in-band video channel if said second in-band video channel has the available capacity for transporting the IP data of the IP connection in said second in-band video channel; and

- one of the at least one out-of-band communication channel if said second in-band video channel does not have the available capacity for transporting the IP data of the IP connection in said second in-band video channel;

- sending a channel resource confirmation message from said headend to said settop box, said channel resource confirmation message identifying said selected communication channel; and

- selecting said selected communication channel at said settop box for receiving the IP data of the IP connection from said headend.

[Emphasis added.]

As admitted by the Examiner in the Office Action, Goffin fails to teach or suggest various limitations of Applicants' invention, including the limitations of determining whether the second in-band video channel has an available communication channel for supporting an IP connection, and selecting either the an available communication channel in said second in-band video channel or one

of the at least one out-of-band communication for transporting the IP data of the IP connection. Furthermore, Goffin fails to teach or suggest determining whether a second in-band video channel has available capacity for transporting IP data of the IP connection. Thus, Goffin must also fail to teach or suggest that available capacity is determined based on a number of other IP connections supported by said second in-band video channel, as taught in Applicants' invention of at least claim 4. Furthermore, Addington and Banker, alone or in combination, fail to bridge the substantial gap between Goffin and Applicants' invention.

In general, Addington discloses a method for delivery of IP data over MPEG-2 transport networks. Addington teaches that an IP data route may specify an out-of-band data stream, rather than an in-band data path, for downstream IP data communications from an IP server to a home communications terminal. Although Addington discloses use of an out-of-band channel for transporting IP data, Addington is completely devoid of any teaching or suggestion of determining whether an in-band video channel has available capacity for transporting IP data of the IP connection in the in-band video channel, much less that available capacity is determined based on a number of other IP connections supported by the in-band video channel, as taught in Applicants' invention of at least claim 4. Furthermore, Banker fails to bridge the substantial gap as between Goffin and Addington and Applicants' invention.

In general, Banker teaches the use of in-band audio, in-band video, and out-of-band signals for transmitting data in a television system. (Banker, Abstract). In the Office Action, the Examiner cites a specific portion of Banker for teaching the selection of one of an available communications channel in an in-band video channel or an out-of-band channel for data transmission. (Office Action, Pg. 5). The cited portion of Banker, however, merely teaches that selection between transmission over in-band and out-of-band channels is performed according to queue occupancy. In particular, Banker specifically states that the "headend controller 130, for example, may determine that the queue for outgoing in-band data transactions is so great that out-of-band data transmission is a more expedient mode of transmission...a scrambler or data inserter may meet with a similar full

queue or other situation in which the data transaction is urgent....” (Banker, Col. 8, Lines 8-10, Emphasis added).

In other words, as taught in Banker, selection between in-band transmission and out-of-band transmission is based on queue occupancy. Banker is completely devoid of any teaching or suggestion of determining whether an in-band video channel has available capacity for transporting IP data of an IP connection in the in-band video channel using IP over MPEG data packets. Furthermore, since Banker fails to teach or suggest determining whether an in-band video channel has available capacity, Banker must also fail to teach or suggest that available capacity is determined based on a number of other IP connections supported by the in-band video channel, as taught in Applicants’ invention of at least claim 4.

As taught in Banker, out-of-band transmission is used in response to large queue delays when a data transaction is urgent. Banker teaches that as video data is buffered waiting for downstream transmission in an in-band channel, other data may be transmitted using out-of-band transmission for ensuring that the other data is transmitted more expediently. The transmission of data over an out-of-band channel based on queue occupancy, as taught in Banker, is not selection between an available communication channel in an second in-band video channel if the second in-band video channel has the available capacity for transporting the IP data of the IP connection and one of at least one out-of-band communication channel if the second in-band video channel does not have the available capacity for transporting the IP data of the IP connection, as taught in Applicants’ invention of at least claim 4.

Furthermore, for at least the reasons discussed herein, even if the cited references could be combined as the Examiner suggests, the combination of the references does not result in Applicants’ claimed invention. As described herein, Goffin teaches a television communication system having in-band and out-of-band channels, Addington teaches transmission of IP data using in-band or out-of-band channels, and Banker teaches that data may be transmitted over an out-of-band channel if the occupancy of the queue associated with an in-band channel is such that out-of-band transmission is more expedient. Thus, the combination of Goffin,

Addington, and Banker merely teaches a television system in which IP data may be transported using MPEG over an in-band channel or an out-of-band channel depending upon the occupancy of a queue associated with the in-band channel.

The combination, however, is completely devoid of any teaching or suggestion of determining whether an in-band video channel has available capacity for transporting IP data of the IP connection in the in-band video channel using IP over MPEG data packets, much less that available capacity is determined based on a number of other IP connections supported by the in-band video channel. The combination is also completely devoid of any teaching or suggestion of selecting one of the in-band video channel or an out-of-band channel for supporting the IP connection depending upon the determination as to whether the in-band video channel has the available capacity. Thus, Applicants respectfully submit that Goffin, Addington, and Banker, alone or in combination, fail to teach or suggest Applicants' invention, as a whole.

The test under 35 U.S.C. §103 is not whether an improvement or a use set forth in a patent would have been obvious or non-obvious; rather the test is whether the claimed invention, considered as a whole, would have been obvious. Jones v. Hardy, 110 USPQ 1021, 1024 (Fed. Cir. 1984) (emphasis added). Moreover, the invention as a whole is not restricted to the specific subject matter claimed, but also embraces its properties and the problem it solves. In re Wright, 6 USPQ 2d 1959, 1961 (Fed. Cir. 1988) (emphasis added). Goffin, Addington, and Banker, alone or in combination, fail to teach or suggest the Applicants' invention, as a whole.

As such, Applicants submit that independent claim 4 is non-obvious over Goffin in view of Addington and Banker under 35 U.S.C. §103(a) and is patentable thereunder. Furthermore, Applicants' independent claims 10, 16, and 19-21 recite features similar to the relevant features recited in independent claim 4. Thus, Applicants submit that claims 10, 16, and 19-21 are also non-obvious over Goffin in view of Addington and Banker under 35 U.S.C. §103(a) and are patentable thereunder.

Furthermore, claims 5-6, 11-12, 17-18, and 22-23 depend, either directly or indirectly, from independent claims 4, 10, 16, and 21, respectively, and recite additional features therefor. As such, and for at least the same reasons discussed above, Applicants submit that these dependent claims are also non-obvious over Goffin in view of Addington and Banker under 35 U.S.C. §103 and are patentable thereunder. Therefore, the Applicants respectfully request that the rejections be withdrawn.

CONCLUSION

Thus, Applicants submit that the claims are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited. If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Michael Bentley at (732) 383-1434 or Eamon J. Wall at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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